Experiment Title: States of Matter: Balloon Blow-up?

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| Objectives/Goals  The purpose of this experiment is to observe the three states of matter.  **Question**: What happens when a solid and liquid are mixed?  **Research**: All things, living and nonliving are made up of matter. All matter has mass and takes up space. Matter can exist as a solid, liquid, or a gas. All matter is made up of parts too small to see called atoms. Atoms that are joined together are called molecules. Each of these forms is recognized able by the physical properties of the substance. Solids have the following properties: maintaining size, shape, and visibility. Solid cannot move out of their place. Liquid has the following properties: can change shape based on its container while not changing in volume. Most liquids are visible. Whereas gas has the following properties: invisibility and change shape easily. Gas moves about freely. Gas particles spread out to fill their container. Matter can change from one state to another depending on the temperature, so matter can go from a solid to a liquid to a gas and back to a solid by removing the heat.  Methods/Materials  **Materials**: White vinegar, Baking soda, 20oz Water Bottle, Small balloon, pencil and laboratory report.  **Procedure**:   1. Place the funnel on the neck of the balloon and pour a tablespoon of baking soda into the small balloon. 2. Pour white vinegar into the water bottle. Fill it about ½ full of vinegar. 3. Place the lip of the balloon around the top of the bottle being careful not the get any of the baking soda into the bottle. 4. Let the balloon dangle from the bottle. 5. Lift the balloon up allowing the solid to fall into the liquid.   **Results**:  The liquid and solid mixed and the balloon blew-up. The solid and liquid caused a gas to form. The observed bubbles formed, which are the present of gas.  **Conclusions/Discussion**  This activity allows you to see firsthand when you put a solid and liquid together it makes a gas. |
| Terms/Concept:  Solid, Liquid, Matter, Gas, and Physical Change |
| **Summary Statement**  The purpose of this project was to determine that you can move from one state of matter to the next and forms the next state of matter, so a solid and liquid formed a gas. |
| **References**:  <http://www.superteacherideas.com/science7-matter.html>. |

Laboratory Report

Write a sentence about what you are going to do in this experiment?

\_I am going to see if I mix a solid and liquid together I should get a gas.

Results:

What did you observe from the balloon?

The balloon expanded after mixing the two materials. Also, I hard sound like a popping sound and I saw bubbles in the bottle. .

Can you distinguish between the solid and liquid after mixing the two materials?

Yes, once the two mixed, you could see the solid at the bottom of the bottle and the liquid on the top after the two mixed. But I saw bubbles on the top of the liquid too.

How would you identify the presents of a gas?

I identify the presents of a gas by the expansion of the blow and the bubbles that formed in the bottle.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Discussion:

What data was used to make your conclusion?

The presents of the white bubbles and this were one of the images of the present of gas. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

What happen to the baking soda and vinegar?

They mixed together to form a gas. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

What are the bubbles made of?

The bubbles are made of vinegar and baking solid to make a CO2\_Carbon Dioxide. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_